

What is Claimed:

- 1                   1.       A seal for sealing a container opening, said seal comprising at  
2   least one tear resisting composite layer consisting of:
  - 3                   a) an oriented polymer film layer having a top surface and a inner  
4   surface;
  - 5                   b) a thermal bonding polymer layer on said oriented polymer layer  
6   inner surface substantially coextensive thereto, said thermal bonding polymer layer  
7   having a thickness between 10% and 40% of a combined thickness of the oriented  
8   polymer film layer and the thermal bonding polymer layer; and
  - 9                   c) a reinforcing scrim polymer layer also having an inner surface  
10   adjacent and substantially coextensive with the thermal bonding polymer layer said  
11   reinforcing having a bottom surface;
- 12                   said tear resisting composite layer providing tear resistance to said  
13   seal.
- 14                   2.       The seal according to claim 1 wherein the combined thickness  
15   of said polymeric layer and said bonding layer is between about 0.00020 inches and  
16   0.003 inches.
- 1                   3.       The seal according to claim 2 wherein the polymer film layer,  
2   the bonding polymer layer and the reinforcing scrim in said tear resisting composite  
3   layer all have a chemical composition that permits recycling said composite without  
4   separating the layers thereof.

1                   4.     The seal according to claim 3 further comprising an adhesive  
2     layer on said bottom surface of said reinforcing scrim layer.

1                   5.     The seal according to claim 3 wherein said adhesive layer also  
2     has a chemical composition that permits recycling said composite without separating  
3     the layers thereof.

1                   6.     The seal according to claim 4 wherein said adhesive layer is a  
2     thermally activated adhesive layer.

1                   7.     The seal according to claim 2, wherein the oriented polymer  
2     film layer, the thermal bonding polymer layer, and the reinforcing scrim polymer  
3     layer in said tear resisting composite layer each individually comprise a synthetic  
4     condensation polymer,

5                   the synthetic condensation polymers each comprising, in polymerized  
6     form:

7                   1)     a) a carboxylic acid or a mixture of carboxylic acids, and  
8                   b) either i) a diamine or a mixture of diamines, or ii) a diol or a mixture of  
9                   diols, or

10                  2)     an  $\omega$ -amino acid having more than 2 carbon atoms, or a  
11                  mixture of such amino acids,

12                  wherein, for the composite taken as a whole,

13                   at least 90 mol% of a combined total amount of the carboxylic acid or  
14 the mixture of carboxylic acids in the synthetic condensation polymers is the same  
15 carboxylic acid,

16                   at least 90 mol% of a combined total amount of the diamine or the  
17 mixture of diamines in the synthetic condensation polymers is the same diamine,

18                   at least 90 mol% of a combined total amount of the diols or the  
19 mixture of diols in the synthetic condensation polymers is the same diol, and

20                   at least 90 mol% of a combined total amount of the amino acid or the  
21 mixture of amino acids in the synthetic condensation polymers is the same amino  
22 acid.

1                   8.     The seal according to claim 7, wherein the oriented polymer  
2 film layer comprises biaxially oriented polyethylene terephthalate.

1                   9.     The seal according to claim 7 wherein said structure further  
2 comprises a thermally activated adhesive layer on said bottom surface of said  
3 reinforcing scrim layer.

1                   10.    The seal according to claim 3 further comprising a blister  
2 package adhered to said scrim layer bottom surface.

1                   11.    The seal according to claim 10 wherein said blister package is  
2 peelably adhered to said scrim layer bottom surface through a heat activated  
3 adhesive.

1                   12.     The seal according to claim 11 further comprising a blister  
2     package adhered to said bottom surface of said scrim layer and wherein said blister  
3     package includes a surface adapted for adhesion to said tear resisting composite  
4     layer and an adhesive is coated on said surface adapted for adhesion.

1                   13.     The seal according to claim 3 wherein at least one of said  
2     oriented polymer layer top surface and said oriented polymer layer inner surface  
3     contains printed indicia.

1                   14.     The seal according to claim 3 wherein the tear resisting  
2     composite layer further consists of an additional thermal bonding polymer layer on  
3     said bottom surface of said scrim layer and an additional polymer film layer, and  
4     wherein all such layers have a chemical composition that permits recycling said  
5     composite without separating said layers.

1                   15.     The seal according to claim 3 further comprising a container  
2     having an opening and wherein said seal is peelably adhered to and seals said  
3     container opening.

1                   16.     The seal according to claim 3 further comprising at least one  
2     special function layer.